

**What is claimed is:**

1. A linear rolling bearing comprising a guide carriage with a U-shaped cross-section having a U-crossbar and two U-legs so that the guide carriage forms a carriage cavity and partially surrounds a guide rail while being slidably supported through balls on two longitudinal sides of the guide rail, each U-leg of the guide carriage having on an inner surface opposing the guide rail a ground raceway with an approximately quarter circle cross-section for the balls, the raceway being made by a grinding wheel whose diameter is larger than a diagonal dimension of the carriage cavity and whose axis of rotation is situated outside of the guide carriage and forms an acute angle ( $\alpha$ ) with an axis of symmetry of the guide carriage, **characterized in that** a stop surface having a retaining contour for a guide member containing the balls is configured on a guide rail-distal outer surface of each U-leg of the guide carriage, and the raceway on one of the two U-legs and the stop surface having the retaining contour on the other of the two U-legs are made in common in one work step by the grinding wheel.
2. A bearing of Claim 1 wherein the acute angle ( $\alpha$ ) that the axis of rotation of the grinding wheel forms with the axis of symmetry of the guide carriage is about 15°.
3. A bearing of Claim 1 wherein the ground raceway of each U-leg of the guide carriage is situated nearer the U-crossbar, and each U-leg comprises on the inner surface another raceway that is situated further away from the U-crossbar and has an approximately quarter circle cross-section for the balls, the two raceways situated further away from the U-crossbar end in an imaginary plane connecting centers of corresponding load-bearing balls arranged on the two longitudinal sides of the guide rail.

4. A bearing of Claim 1 wherein the guide members containing the balls are detachably fixed on the guide carriage and extend in longitudinal direction from raceways of the guide rail, the balls form endless ball circuits and the guide members comprise for each ball circuit, a region for load-bearing balls, a return canal for returning balls and two deflecting canals that connect the region for load-bearing balls and the return canal to each other at ends thereof.
5. A bearing of Claim 4 wherein each return canal made in the guide member comprises an opening extending along an entire length of the return canal, and said opening also extends along each deflecting canal.
6. A bearing of Claim 5 wherein a width of the opening of the return canal is smaller than a diameter of the balls inserted in the return canal.
7. A bearing of Claim 3 wherein the raceway nearer the U-crossbar and the raceway further away from the U-crossbar on one of the two U-legs and the stop surface having the retaining contour on the other of the two U-legs are made in common in one work step by the grinding wheel.